

1 Remarks

2 Amendments to the claims

3 Claims 23 has been amended as provided above. Specifically, claim 23 has
4 been amended to include all of the limitations of claim 24 (now cancelled). Claims
5 24, 27-29 and 49 have been cancelled, without prejudice. No new matter has been
6 added by the amendments to the claims.

7
8 Rejection of claims under 35 U.S.C. § 102

9 Claims 23-25, 27-29 and 49 have been rejected under 35 U.S.C. § 102(b) as
10 being anticipated by U.S. Patent No. 5,136,305 ("Ims"). As claims 24, 27-29 and 49
11 have been cancelled as provided above, the respective 102 rejections of these
12 claims are now moot.

13 The Applicants respectfully disagree that claims 23 (as amended) and 25 are
14 anticipated by Ims.

15 As a starting point, the PTO and the Federal Circuit provide that §102
16 anticipation requires each and every element of the claimed invention to be
17 disclosed in a single prior art reference. (*In re Spada*, 911 F.2d 705, 15 USPQ2d
18 1655 (Fed. Cir. 1990)). The corollary of this rule is that the absence from a cited
19 §102 reference of any claimed element negates the anticipation. (*Kloster*
20 *Speedsteel AB, et al v. Crucible, Inc., et al*, 793 F.2d 1565, 230 USPQ 81 (Fed. Cir.
21 1986)). Furthermore, **"[a]nticipation requires that all of the elements and**
22 **limitations of the claims are found within a single prior art reference."** (*Scripps*
23 *Clinic and Research Found. v Genetech. Inc.*, 927 F.2d 1565, 1576, 18 U.S.P.Q.2d
24 1001, 1010 (Fed. Cir. 1991 (emphasis added))). Moreover, the PTO and the Federal
25 Circuit provide that §102 anticipation requires that there must be no difference
between the claimed invention and the reference disclosure. (*Scripps Clinic and*
Research Found. v. Genetech, Inc., *id.* (emphasis added))).

1 Accordingly, if the Applicants can demonstrate that any one element or
2 limitation in claims 23 and 25, as respectively amended, is not disclosed by Ims, then
3 the respective claim(s) must be allowed.

4 In the following arguments, the Applicants will focus in particular on
5 independent claim 23, as amended, as the Applicants believe that claim to be
6 allowable over Ims. It is axiomatic that any dependent claim which depends from an
7 allowable base claim is also allowable, and therefore the Applicants do not believe it
8 is necessary to present arguments in favor of each and every dependent claim.

9
10 Claim 23

11 The Applicants contend that claim 23, as amended, (and rejected claim 25
12 that depends therefrom) are not anticipated by Ims. With regard to claim 23, as
13 amended, that claim includes the following features and limitations:

14
15 An imaging apparatus configured to form images on a sheet
16 media, comprising:

17 [...]

18 a controller coupled in signal communication with the thermistor
19 device and configured to control at least one operation of the imaging
20 apparatus in accordance with the level signal, wherein the controller is
21 further configured to provide a level message corresponding to the
22 level signal to a user computer.

23 (Emphasis added.)

24
25 Ims fails to provide a controller coupled in signal communication with the
thermistor device, wherein the controller is further configured to provide a level
message corresponding to the level signal to a user computer, as recited in

1 combination with the other features and limitations of claim 23, as amended. In fact,
2 Ims is completely devoid of the terms and phrases "message", "level message",
3 "computer", "user computer", or any of their respective equivalents, in any context.

4 Rather, Ims is directed to an ink jet printer wherein an ink supply monitoring
5 means provides for the automated replenishing of ink within a translatable ink jet
6 printhead by way of a fixed reservoir (Abstract of Ims). Ims provides no teachings or
7 suggestions whatsoever regarding the provision of any sort of message to a user
8 computer, and Ims certainly does not provide or suggest the provision of a level
9 message, as recited by claim 23, as amended. As a result, Ims fails to provide at
10 least one element or limitation as recited by claim 23, as amended. Thus, the 102
11 rejection of claim 23, as amended, is invalid and should be withdrawn.

12 For at least these reasons the Applicants contend that claim 23, as amended,
13 is allowable. As claim 25 depends from claim 23, it is axiomatic that claim 25 is also
14 allowable at least by virtue of its dependence from an allowable base claim.

15
16 Rejection of Claims under 35 U.S.C. § 103

17 Claims 1, 3-4, 6 and 8-9, 43-47 and 48 have been rejected under 35 U.S.C. §
18 103(a) as being unpatentable over U.S. Patent No. 5,136,305 ("Ims") in view of the
19 text Mechanical Measurements by Beckwith ("Beckwith").

20 Claim 24 has been rejected under 35 U.S.C. § 103(a) as being unpatentable
21 over Ims. Claim 24 has been cancelled as provided above. Therefore, the 103
22 rejection of claim 24 is now moot.

23 The Applicants respectfully disagree that claims 1, 3-4, 6, 8-9, 43-47 and 48
24 are unpatentable over Ims in view of Beckwith.

25 As a starting point, MPEP 706.02(j) states:

"[t]o establish a *prima facie* case of obviousness, three basic
criteria must be met. First, there must be some suggestion or

1 motivation, either in the cited references themselves or in the
2 knowledge generally available to one of ordinary skill in the art, to
3 modify the reference or to combine the reference teachings. Second,
4 there must be a reasonable expectation of success. Finally, **the prior**
5 **art reference** (or references when combined) **must teach or suggest**
6 **all the claim limitations.** The teaching or suggestion to make the
7 claimed combination and the reasonable expectation of success must
8 both be found in the prior art and not based on applicant's disclosure."
9 (Emphasis added.)
10

11 In the following arguments, the Applicants will focus in particular on
12 independent claims 1, 43 and 48, as the Applicants believe those claims to be
13 allowable over Ims in view of Beckwith. It is axiomatic that any dependent claim
14 which depends from an allowable base claim is also allowable, and therefore the
15 Applicants do not believe it is necessary to present arguments in favor of each and
16 every dependent claim.
17

18 Claim 1

19 The Applicants contend that claim 1 (and rejected claims 3-4, 6 and 8-9 that
20 depend therefrom) are patentable over Ims in view of Beckwith. With regard to claim
21 1, that claim includes the following features and limitations:
22

23 A media level measurement apparatus, comprising:
24 a sensor configured to provide a temperature signal
25 corresponding to an ambient temperature;
[...]

1 a signal processor configured to provide a media level signal in
2 accordance with a comparison between the level signal and the
3 temperature signal in response to the second signal.

4 (Emphasis added.)

5
6 Ims fails to teach or suggest, as admitted by the Examiner (page 5 of Office
7 Action), a sensor configured to provide a temperature signal corresponding to an
8 ambient temperature, as recited in combination with the other features and
9 limitations of claim 1. Also, Ims fails to teach or suggest a signal processor
10 configured to provide a media level signal in accordance with a comparison between
11 the level signal and the temperature signal in response to the second signal, as
12 recited in combination with the other features and limitations of claim 1.

13 Rather, Ims is directed to an ink supply monitoring circuit 33 wherein electrical
14 power is supplied to a thermistor 34 for a fixed length of time and a change in
15 temperature (i.e., of that same, singular thermistor) is measured during that fixed
16 length of time in order to derive a signal representing ink content within an ink jet
17 printhead (12, 18) (Figs. 1-2; Col. 4, lines 57-66; and Col. 5, lines 54-62 of Ims).
18 Furthermore, Ims specifically recites that the change in temperature of the (singular)
19 thermistor 34 is measured over (i.e., during the entirety of) the energization time in
20 order to make the measurement (i.e., of the ink content) *insensitive to ambient*
21 *temperature fluctuations* (Col. 4, lines 62-66 of Ims). This is not the same as what is
22 recited by Applicants' claim 1. In fact, the methods and apparatus of Ims teach
23 specifically away from the present invention as recited by instant claim 1.

24 In any case, Ims fails to teach or suggest any sort of sensor configured to
25 provide a temperature signal corresponding to an ambient temperature, as recited
by claim 1. In turn, Ims fails to teach or suggest comparison between a level signal
and a temperature signal, for any reason.

1 Beckwith fails to cure the deficiencies of Ims. Specifically, Beckwith fails to
2 teach or suggest a sensor configured to provide a temperature signal corresponding
3 to an ambient temperature, as recited in combination with the other features and
4 limitations of claim 1. Furthermore, Beckwith fails to teach or suggest a signal
5 processor configured to provide a media level signal in accordance with a
6 comparison between the level signal and the temperature signal in response to the
7 second signal, as recited in combination with the other features and limitations of
8 claim 1.

9 The Examiner has alleged that a thermistor must have a reference
10 temperature (i.e., T_0), as recited within equations 16.3 and 16.3a of Beckwith, in
11 order to function correctly in determining a change in resistance and thus, a
12 temperature (pages 5-6 of Office Action). The Examiner further alleges that, as a
13 result of this required reference temperature T_0 , it would obvious to one of skill in the
14 art to employ an additional (i.e., separate) thermistor for purposes of measuring an
15 ambient (or other reference) temperature. Respectfully, the Examiner has
16 misinterpreted the teachings of Beckwith.

17 On the contrary, the term T_0 of Beckwith refers to a baseline or reference
18 temperature that is selected during the original design and manufacturing of a
19 particular thermistor device, wherein that baseline temperature T_0 corresponds to a
20 baseline (i.e., predetermined) electrical resistance value R_0 . For example, a given
21 thermistor may be defined and manufactured having a baseline electrical resistance
22 R_0 of 1000 Ohms corresponding to a baseline temperature T_0 of 298.15 degrees K
23 (25 degrees C). The manufacturer provides this information (usually in the form of a
24 temperature-vs.-resistance graph or curve) when selling such a thermistor in order to
25 enable its application by the end user. This R_0 / T_0 relationship is further exemplified
by Figure 16.6 and Table 16.3 on pages 533 and 535 of Beckwith, respectively.

1 In short, Beckwith does not teach or suggest that a first thermistor is needed
2 (or even recommended) to sense the/an ambient (i.e., reference) temperature, while
3 a second thermistor senses the/a process or other temperature of particular interest.

4 Therefore, there is no way to select elements from Ims, and then to somehow
5 combine those elements with other elements selected from Beckwith, in order to
6 arrive at the present invention as recited by instant claim 1, as no possible
7 combination of Ims and Beckwith teaches or suggests all of the required features
8 and limitations. Such deficiencies on the part of Ims and Beckwith render the 103
9 rejection of claim 1 invalid in view of the requirements of MPEP 706.02(j).

10 For at least these reasons, the Applicants contend that claim 1 is allowable.
11 As claims 3-4, 6 and 8-9 depend from claim 1, it is axiomatic that they too are
12 allowable at least by virtue of their dependence from an allowable base claim.

13
14 Claim 43

15 The Applicants contend that claim 43 (and rejected claims 44-47 that depend
16 therefrom) are patentable over Ims in view of Beckwith. With regard to claim 43, that
17 claim includes the following features and limitations:

18
19 A method of measuring a media level, comprising:
20 providing a thermistor device;
21 supporting a lengthwise portion of the thermistor device in
22 contact with the media;
23 applying an electrical pulse to the thermistor device;
24 waiting for a predetermined period of time;
25 sensing a level signal from the thermistor device after the
predetermined period of time;
sensing an ambient temperature;

1 comparing the ambient temperature to the level signal; and
2 providing a media level signal in response thereto.
3 (Emphasis added.)
4

5 Ims fails to teach or suggest waiting for a predetermined period of time, and
6 sensing a level signal from the thermistor device **after** the predetermined period of
7 time, as recited in combination with the other features and limitations of claim 43.
8 Furthermore, Ims fails to teach or suggest sensing an ambient temperature,
9 comparing the ambient temperature to the level signal, and providing a media level
10 signal in response thereto, as recited in combination with the with the other features
11 and limitations of claim 43.

12 Again, Ims is directed to measuring a **change** in the temperature (i.e.,
13 resistance) of a thermistor **during** the time power is applied to the thermistor (Col. 4,
14 lines 62-66 of Ims). In fact, Ims teaches away from the present invention as recited
15 by instant claim 43, as Ims performs such continuous signal measuring during
16 thermistor energization *specifically for the purpose of ignoring the effects of* (as
17 opposed to measuring) *ambient temperature* (Col. 4, lines 57-66 of Ims). That is,
18 Ims provides no teaching, suggestion or motivation toward sensing an ambient
19 temperature, for any reason. This is not the same as what is recited by instant
20 claim 43.

21 Beckwith fails to cure the deficiencies of Ims. In particular, Beckwith fails to
22 teach or suggest sensing an ambient temperature, comparing the ambient
23 temperature to the level signal, and providing a media level signal in response
24 thereto, as recited in combination with the with the other features and limitations of
25 claim 43. As described above in regard to claim 1, Beckwith provides no teaching or
suggestion related to sensing an ambient temperature, for any purpose, let alone for
purposes of comparing that ambient temperature with any sort of level signal.

1 Therefore, there is no way to select elements from Ims, and then to somehow
2 combine those elements with other elements selected from Beckwith, in order to
3 arrive at the present invention as recited by instant claim 43, as no possible
4 combination of Ims and Beckwith teaches or suggests all of the required features
5 and limitations. Such deficiencies on the part of Ims and Beckwith render the 103
6 rejection of claim 43 invalid in view of the requirements of MPEP 706.02(j).

7 For at least these reasons, the Applicants contend that claim 43 is allowable.
8 As claims 44-47 depend from claim 43, it is axiomatic that they too are allowable at
9 least by virtue of their dependence from an allowable base claim.

10
11 Claim 48

12 The Applicants contend that claim 48 is patentable over Ims in view of
13 Beckwith. With regard to claim 48, that claim includes the following features and
14 limitations:

15
16 A media level measurement apparatus, comprising:
17 means for sensing an ambient temperature;
18 means for providing a first signal and a second signal;
19 means for providing an electrical current in response to the first
20 signal;
21 means for providing a level signal corresponding to a level of a
22 media in response to the electrical current; and
23 means for providing a media level signal in accordance with a
24 comparison between the level signal and the temperature signal in
25 response to the second signal.

(Emphasis added.)

1 Ims fails to teach or suggest means for sensing an ambient temperature, as
2 recited in combination with the other features and limitations of claim 48. Also, Ims
3 fails to teach or suggest means for providing a media level signal in accordance with
4 a comparison between the level signal and the temperature signal in response to the
5 second signal, as recited in combination with the other features and limitations of
6 claim 48. Again, Ims provides no teaching, suggestion or motivation whatsoever
7 directed to sensing ambient temperature, for any reason.

8 Beckwith fails to cure the deficiencies of Ims. Specifically, Beckwith fails to
9 teach or suggest means for sensing an ambient temperature, as recited in
10 combination with the other features and limitations of claim 48. Also, Beckwith fails to
11 teach or suggest means for providing a media level signal in accordance with a
12 comparison between the level signal and the temperature signal in response to the
13 second signal, as recited in combination with the other features and limitations of
14 claim 48. Once again, Beckwith is directed to a physically describing and
15 mathematically modeling thermistor devices. Beckwith provides no suggestion or
16 motivation related to sensing an ambient temperature for any reason, and Beckwith
17 certainly does not teach or motivate comparing an ambient temperature with a level
18 signal, as recited, in varying language, by instant claim 48.

19 Thus, there is no way to select elements from Ims, and then to somehow
20 combine those elements with other elements selected from Beckwith, in order to
21 arrive at the present invention as recited by instant claim 48, as no possible
22 combination of Ims and Beckwith teaches or suggests all of the required features
23 and limitations. Such deficiencies on the part of Ims and Beckwith render the 103
24 rejection of claim 48 invalid in view of the requirements of MPEP 706.02(j).

25 For at least these reasons, the Applicants contend that claim 48 is allowable.

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The Examiner is respectfully requested to contact the below-signed representative if the Examiner believes this will facilitate prosecution toward allowance of the claims.

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